Pneumatic Tools Safety Talk



What’s At Stake?

Pneumatic tools are powered by compressed air and include chippers, drills, hammers, and sanders.

Pneumatic Tools and Air compressors include:

- Drills
- Grinders
- Impact wrenches
- Nailers
- Riveters
- Sanders
- Saws
- Screwdrivers
- Staplers

What’s The Danger?

Workers can be injured by pneumatic power tools when:

- **Attachments or fasteners are not secured properly and fly off the tool.** To control this hazard, make sure your pneumatic impact tools to have safety clips or retainers that prevent dies and tools from being accidentally expelled from the barrel.
- **The operator misses the intended surface, and a nail or staple strikes a bystander.** To prevent this from happening, make sure all handheld pneumatically powered tools used for driving nails, staples, and similar fasteners that operate at 100 psig (pound-force per square-inch gauge) or more line pressure are equipped with a safety device that prevents the tool from operating unless the muzzle is in contact with a surface.
- **Hoses are accidentally disconnected from the tools.** An unconnected high-pressure hose is a flogging hazard to workers in the area. To prevent this, make sure that all hose connections on pneumatic power tools, including the one at the tool, are secured by a positive locking device to prevent accidental disconnection. Alternately, a ball check device or equivalent can be provided at the air source.
- **Hoses fail.** As when pressurized hoses become disconnected, a hose that fails can whip around wildly, creating a hazard. To prevent damage to hoses, make sure that the manufacturer’s safe operating pressures for hoses, pipes, valves,

filters, and other fittings are not exceeded. Also, make sure that hoses with greater than a half-inch inside diameter have a safety device to reduce pressure in case of hose failure. Hoses must not be used to lift or lower tools.
- **Tools are accidentally activated.** Workers may trip on air hoses or in some other fashion accidentally activate pneumatic tools. For this reason, pneumatic nailers and staplers must be disconnected from their air supply at the tool when not in use or unattended.

How To Protect Yourself

There are six important characteristics of Pneumatic Tools that dictate measures to prevent injuries with use of these power tools.

1. **Air pressure**

Electrical tools are powered from a source that provides a well-regulated standard current. However, with air powered tools, air may be delivered at varying pressures and flows. If the pressure/flow exceeds the manufacturer's rating, the tool itself could over-speed, delivering too much torque or other excessive force. This is hazardous due to the increased possibility of tool or workpiece breakage. Inadequate pressure or flow could also result in an underperforming tool. This may prompt you to apply excessive force in your work, possibly causing tool breakage and injury. Adjust your air pressure to the manufacturer's rating. Make sure hoses are of the correct inside diameter and are not kinked or crushed. Your compressor and receiver must have enough capacity to deliver air in an amount sufficient to properly operate all attached tools.

2. **Noise Levels**

Pneumatic tools discharge exhaust air at the tool itself or nearby. Frequently, this air is not muffled and therefore pneumatic tools can be much noisier than electric tools. As prolonged exposure to loud noise can damage your hearing, precautions should be taken. Either effective mufflers can be installed on the exhaust, or hearing protection should be worn.

3. **Oil & Air Quality**

The discharge of air can cause concerns. The air feeding the tool may contain oil or antifreeze, discharging contaminated air into the environment around you. Special precautions may be needed in confined or poorly ventilated spaces. If oil-contaminated air discharges near where you grip the tool, your hands may become oily, resulting in a dangerous loss of grip. It helps to frequently wipe both your hands and the tool and to be sure you are not over oiling the tool. To eliminate the hazard, find a replacement tool with a better design.

4. **Air Temperature**

If the air discharges on your hand, you can feel that it is cold. Under certain conditions, the temperature could be low enough to cause frostbite, stiffen your fingers, or even make you more susceptible to certain types of cumulative trauma injuries. Again, this may indicate poor tool design. Gloves may help if they can be worn without creating the additional hazard of becoming caught up in any rotating or reciprocating parts.

5. **Shock Potential**

Air powered tools are not grounded or double insulated so if you contact a live wire

while working with a pneumatic tool, you can be shocked. Make certain all electric power in the immediate work area is isolated.

6. **Whipping Hose Danger**

If an electric cord were to break, there is generally not much danger unless you come in contact with the conductors. However, a severed air hose can whip around violently until the air is shut off. You may be injured by the whipping hose or while scrambling to get out of its way. Protect the hose from physical damage. When using quick disconnect type fittings, install the male end of the tool.

Use Pneumatic Tools Safely

- Review the manufacturer’s instruction before using a tool.
- Wear safety glasses or goggles, or a face shield (with safety glasses or goggles), and, where necessary, safety shoes or boots and hearing protection.
- Post warning signs where pneumatic tools are used. Set up screens or shields in areas where nearby workers may be exposed to flying fragments, chips, dust, and excessive noise.
- Ensure that the compressed air supplied to the tool is clean and dry. Dust, moisture, and corrosive fumes can damage a tool. An in-line regulator filter and lubricator increases tool life.
- Keep tools clean and lubricated, and maintain them according to the manufacturers’ instructions.
- Use only the attachments that the manufacturer recommends for the tools you are using.
- Be careful to prevent hands, feet, or body from injury in case the machine slips or the tool breaks.
- Reduce physical fatigue by supporting heavy tools with a counter-balance wherever possible.

Handle Air Hoses Properly

- Use the proper hose and fittings of the correct diameter.
- Use hoses specifically designed to resist abrasion, cutting, crushing and failure from continuous flexing.
- Choose air-supply hoses that have a minimum working pressure rating of 1035 kPa (150 psig) or 150% of the maximum pressure produced in the system, whichever is higher.
- Check hoses regularly for cuts, bulges and abrasions. Tag and replace, if defective.
- Blow out the air line before connecting a tool. Hold hose firmly and blow away from yourself and others.
- Make sure that hose connections fit properly and are equipped with a mechanical means of securing the connection (e.g., chain, wire, or positive locking device).
- Install quick disconnects of a pressure-release type rather than a disengagement type. Attach the male end of the connector to the tool, NOT the hose.
- Do not operate the tool at a pressure above the manufacturer’s rating.
- Turn off the air pressure to hose when not in use or when changing power tools.
- Do not carry a pneumatic tool by its hose.
- Avoid creating trip hazards caused by hoses laid across walkways or curled underfoot.
- Do not use compressed air to blow debris or to clean dirt from clothes.

Final Word

Pneumatic tools offer great versatility and the capability to get a job done quickly and efficiently. As with any energized equipment there is the potential for harm to people or property.